Unit overview: Addition – Year Reception

National Curriculum requirements

Children at the expected level of development will:

- Have a deep understanding of number to 10, including the composition of each number;
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Vocabulary

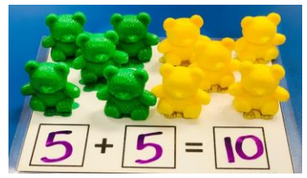
- number names (0 – 20 and beyond)
- number bond
- add / addition / plus
- part
- whole / altogether
- equal to
- more than
- equation

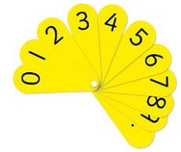
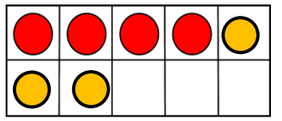
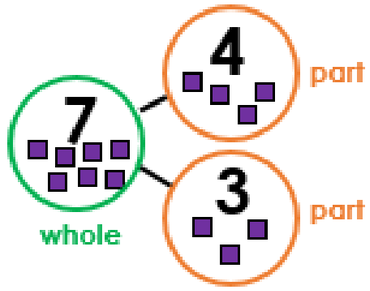
Manipulatives

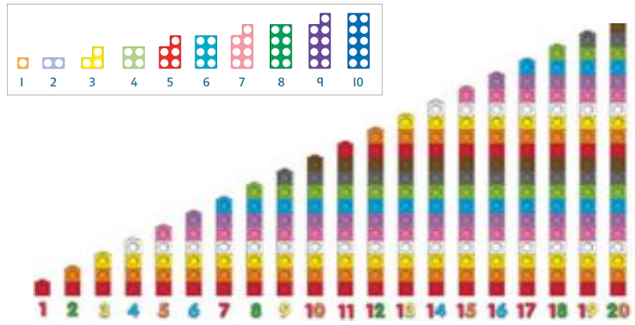
- number cards
- counters
- interlocking cubes
- ten frames
- number lines
- bead strings
- counting tools (i.e. counting bears)

Visual representations







Learning sequence

- Solve real-world mathematical problems with number up to 5.
- Counts objects, actions and sounds.
- Explore the composition of numbers up to 5.
- Subitise within numbers up to 5.
- Explore the composition of numbers up to 10.
- Use concrete objects to add two parts.
- Automatically recall number bonds for numbers 0-5 and some to 10.
- Explore the composition of numbers to 20.
- Solve real-world mathematical problems that involve addition using concrete objects.

Sentence stems

_____ add _____ is equal to _____.

_____ plus _____ is equal to _____.

_____ is a part. _____ is a part. The whole is _____.

The whole is _____; the parts are _____ and _____.

To find the _____ you add the _____ to the other _____.

Unit overview: Addition – Year 1

National Curriculum requirements

By the end of the year, the children will be able to:

- read, write and interpret mathematical statements involving addition (+) and equals (=) signs
- represent and use number bonds and within 20
- add one-digit and two-digit numbers to 20, including zero
- solve one-step problems that involve addition, using concrete objects and pictorial representations, and missing number problems such as 17 = ☐ + 9.

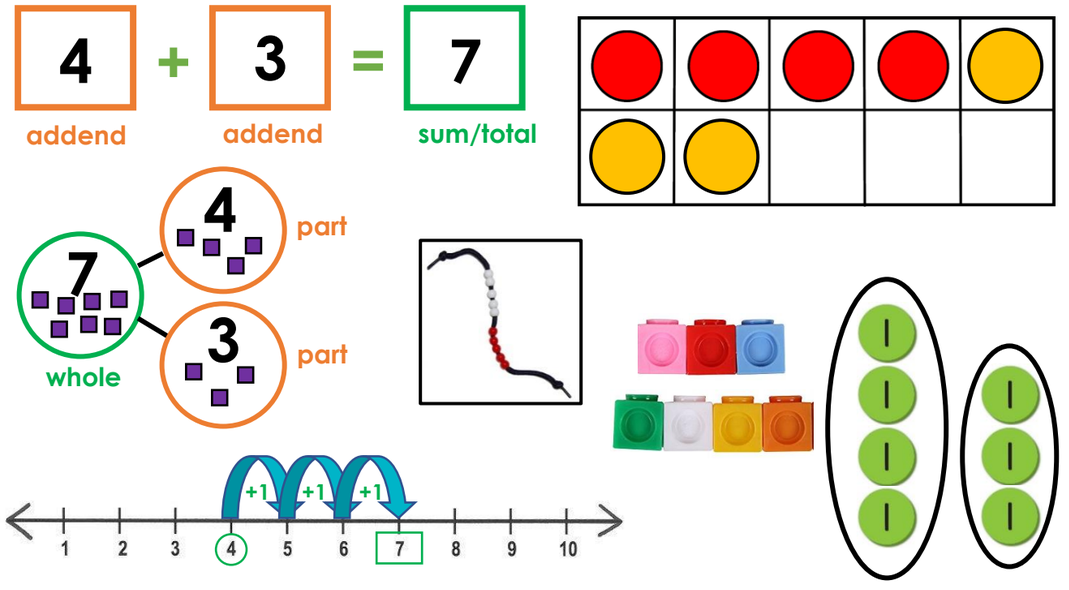
Vocabulary

- number names (0 – 100)
- digit
- number bonds
- add / addition / plus
- part / addend
- whole / sum
- equal to

Manipulatives

- number cards
- counters
- dienes
- place value counters
- interlocking cubes
- ten frames
- number lines
- bead strings

Visual representations



Sentence stems

_____ add _____ is equal to _____.

_____ plus _____ is equal to _____.

_____ is a part. _____ is a part. The whole is _____.

_____ is an addend. _____ is an addend. The sum is _____.

The whole is _____; the parts are _____ and _____.

The sum is _____; the addends are _____ and _____.

_____ add _____ has a total of _____.

To find the _____ you add the _____ to the other _____.

Learning sequence

- read, write and interpret mathematical statements involving addition (+) and equal to (=) signs
- represent and use number bonds and related facts within 10, e.g. 6 + 2 = 8
- add one-digit numbers within 10, including zero
- represent and use number bonds and related facts within 20
- add one-digit and two-digit numbers to 20, including zero using concrete objects, pictorial representations, and mentally, including:
  - adding a two-digit number to a one
  - adding three one-digit numbers
- solve one-step problems that involve addition using concrete objects and pictorial representations, and missing number problems
- estimate to check answers

Unit overview: Addition – Year 2

National Curriculum requirements

By the end of the year, the children will be able to:

- solve problems with addition:
  - using concrete objects and pictorial representations, including those involving numbers, quantities and measures
  - applying their increasing knowledge of mental and written methods
- recall and use addition facts to 20 fluently, and derive and use related facts up to 100
- add numbers using concrete objects, pictorial representations, and mentally, including:
  - a two-digit number and ones
  - a two-digit number and tens
  - two two-digit numbers
  - adding three one-digit numbers
- show that addition of two numbers can be done in any order (commutative)
- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

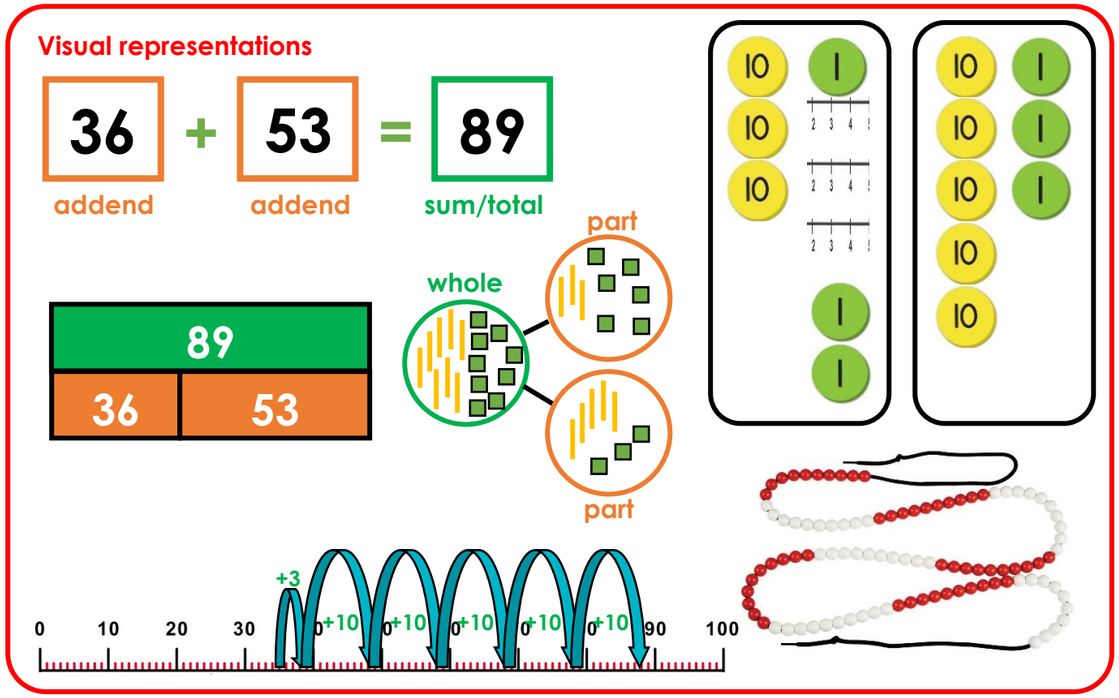
Vocabulary

- digit
- number bonds
- add / addition / plus
- part / addend
- whole / sum
- equal to
- partition
- commutative

Manipulatives

- counters
- dienes
- place value counters
- interlocking cubes
- hundred squares
- ten frames
- number lines
- bead strings

Visual representations



Sentence stems

_____ add _____ is equal to _____.

_____ plus _____ is equal to _____.

_____ is a part. _____ is a part. The whole is _____.

_____ is an addend. _____ is an addend. The sum is _____.

The whole is _____; the parts are _____ and _____.

The sum is _____; the addends are _____ and _____.

_____ add _____ has a total of _____.

To find the _____ you add the _____ to the other _____.

Learning sequence

- recall and use addition facts to 20 fluently, and derive and use related facts up to 100
- show that addition of two numbers can be done in any order (commutative)
- using number bond facts, add numbers using concrete objects, pictorial representations, and mentally, including:
  - a two-digit number and ones
  - a two-digit number and tens
  - two two-digit numbers
  - adding three one-digit numbers
- using a 'make the next 10' strategy, add numbers using concrete objects, pictorial representations, and mentally, including:
  - two one digit numbers
  - a two-digit number and ones
  - two two-digit numbers
- solve problems with addition: using concrete objects and pictorial representations, including those involving numbers, quantities and measures
- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems
- apply their increasing knowledge of mental and written methods in a range of scenarios.

Unit overview: Addition – Year 3

National Curriculum requirements

By the end of the year, the children will be able to:

- add numbers mentally, including:
  - a three-digit number and ones
  - a three-digit number and tens
  - a three-digit number and hundreds
- add numbers with up to three digits, using formal written methods of columnar addition
- estimate the answer to a calculation and use inverse operations to check answers
- solve problems, including missing number problems, using number facts, place value, and more complex addition.

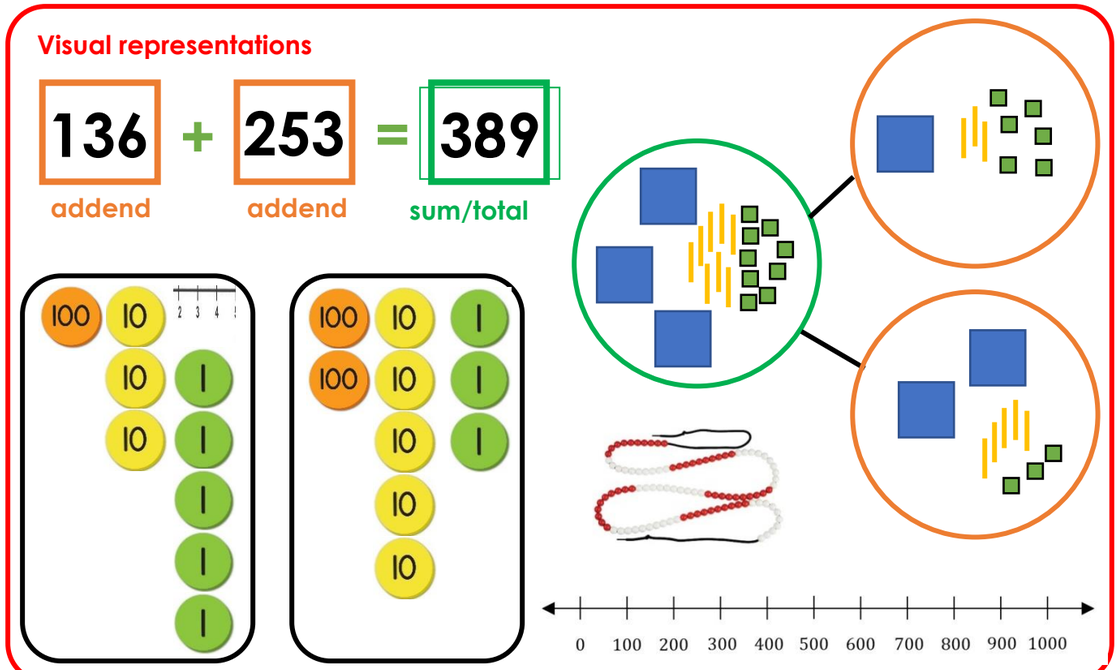
Vocabulary

- digit
- number bonds
- add / addition / plus
- part / addend
- whole / sum
- equal to
- partition
- commutative
- estimate

Manipulatives

- counters
- dienes
- place value counters
- interlocking cubes
- hundred squares
- ten frames
- number lines
- bead strings

Visual representations



Sentence stems

_____ add _____ is equal to _____.

_____ plus _____ is equal to _____.

_____ is a part. _____ is a part. The whole is _____.

_____ is an addend. _____ is an addend. The sum is _____.

The whole is _____; the parts are _____ and _____.

The sum is _____; the addends are _____ and _____.

_____ add _____ has a total of _____.

To find the _____ you add the _____ to the other _____.

Learning sequence

- using number bond facts, add numbers using concrete objects, pictorial representations, and mentally, including:
  - a two-digit number and ones
  - a two-digit number and tens
  - two two-digit numbers
  - adding three one-digit numbers
- using a 'make the next 10/100' strategy, add numbers using concrete objects, pictorial representations, and mentally, including:
  - two one digit numbers
  - a two-digit number and ones
  - two two-digit numbers
- add numbers with up to three digits, using formal written methods of columnar addition
- solve problems, including missing number problems, using number facts, place value, and more complex addition
- estimate the answer to a calculation and use inverse operations to check answers

Unit overview: Addition – Year 4

National Curriculum requirements

By the end of the year, the children will be able to:

- add numbers with up to 4 digits using the formal written methods of columnar addition where appropriate
- estimate and use inverse operations to check answers to a calculation
- solve addition two-step problems in contexts, deciding which operations and methods to use and why.

Vocabulary

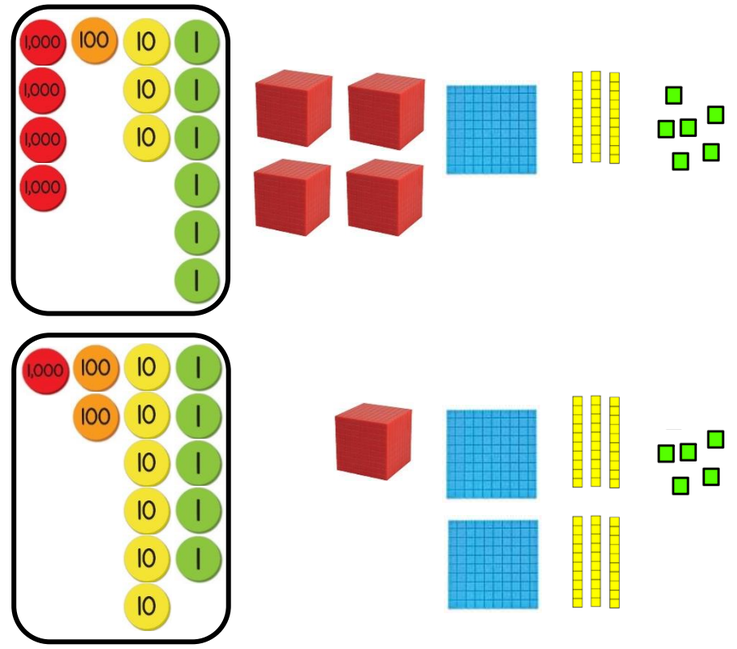
- digit
- number bonds
- add / addition / plus
- part / addend
- whole / sum
- equal to
- partition
- commutative
- estimate

Manipulatives

- counters
- dienes
- place value counters
- interlocking cubes
- hundred squares
- ten frames
- number lines
- bead strings

Visual representations

$$\begin{array}{r} 4136 \\ +1265 \\ \hline 5401 \\ 1\ \ 1 \end{array}$$



Sentence stems

_____ add _____ is equal to _____.

_____ plus _____ is equal to _____.

_____ is a part. _____ is a part. The whole is _____.

_____ is an addend. _____ is an addend. The sum is _____.

The whole is _____; the parts are _____ and _____.

The sum is _____; the addends are _____ and _____.

_____ add _____ has a total of _____.

To find the _____ you add the _____ to the other _____.

Learning sequence

- using number bond facts, add numbers using concrete objects, pictorial representations, and mentally, including:
  - a two-digit number and ones
  - a two-digit number and tens
  - two two-digit numbers
  - two three-digit numbers
  - two four-digit numbers
  - adding three one-digit numbers
- using a 'make the next 10/100/1000' strategy, add numbers using concrete objects, pictorial representations, and mentally, including:
  - two one digit numbers
  - a two-digit number and ones
  - two two-digit numbers
  - two three-digit numbers
  - two four-digit numbers
- add and subtract numbers with up to 4 digits using the formal written methods of columnar addition
- estimate and use inverse operations to check answers to a calculation
- solve addition two-step problems in contexts, deciding which methods to use and why

Unit overview: Addition – Year 5

National Curriculum requirements

By the end of the year, the children will be able to:

- add whole numbers with more than 4 digits, including using formal written methods (columnar addition)
- add numbers mentally with increasingly large numbers
- use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- solve addition multi-step problems in contexts, deciding which operations and methods to use and why.

Vocabulary

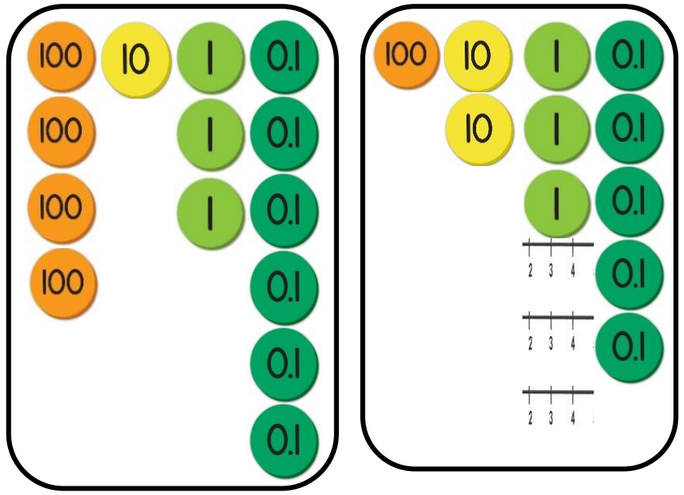
- digit
- number bonds
- add / addition / plus
- part / addend
- whole / sum
- equal to
- partition
- commutative
- estimate

Manipulatives

- counters
- dienes
- place value counters
- interlocking cubes
- hundred squares
- ten frames
- number lines
- bead strings

Visual representations

$$\begin{array}{r} 413.6 \\ +126.5 \\ \hline 540.1 \\ \scriptstyle 1\ \ 1 \end{array}$$



Sentence stems

_____ add _____ is equal to _____.

_____ plus _____ is equal to _____.

_____ is a part. _____ is a part. The whole is _____.

_____ is an addend. _____ is an addend. The sum is _____.

The whole is _____; the parts are _____ and _____.

The sum is _____; the addends are _____ and _____.

_____ add _____ has a total of _____.

To find the _____ you add the _____ to the other _____.

Learning sequence

- revise addition skills from Years 1 – 4
- add numbers mentally with increasingly large numbers
- add whole numbers with more than 4 digits, including using formal written methods (columnar addition)
- use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- solve addition multi-step problems in contexts, deciding which methods to use and why
- solve problems involving numbers up to three decimal places

Unit overview: Addition – Year 6

National Curriculum requirements

By the end of the year, the children will be able to:

- perform mental calculations, including with mixed operations and large numbers
- solve addition multi-step problems in contexts, deciding which operations and methods to use and why

Vocabulary

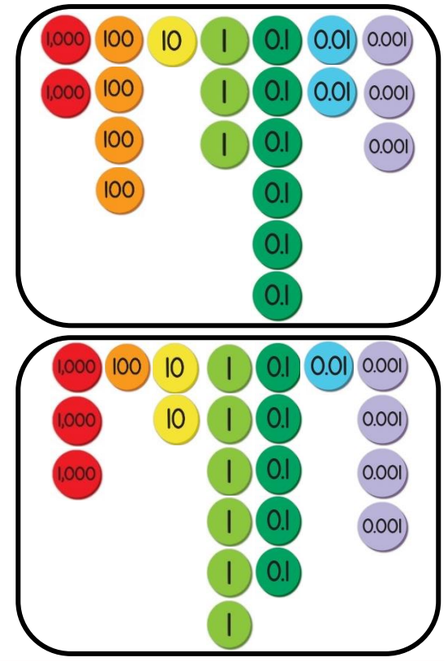
- digit
- number bonds
- add / addition / plus
- part / addend
- whole / sum
- equal to
- partition
- commutative
- estimate

Manipulatives

- counters
- dienes
- place value counters
- interlocking cubes
- hundred squares
- ten frames
- number lines
- bead strings

Visual representations

$$\begin{array}{r} 2413.623 \\ +\,3126.514 \\ \hline 5540.137 \\ 1\ \ 1 \end{array}$$



Sentence stems

_____ add _____ is equal to _____.

_____ plus _____ is equal to _____.

_____ is a part. _____ is a part. The whole is _____.

_____ is an addend. _____ is an addend. The sum is _____.

The whole is _____; the parts are _____ and _____.

The sum is _____; the addends are _____ and _____.

To find the _____ you add the _____ to the other _____.

If I know _____ then I can calculate _____

Learning sequence

- revise addition skills from Years 1 – 5
- add numbers mentally with increasingly large numbers
- add whole numbers with more than 4 digits, including using formal written methods (columnar addition)
- use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- solve addition multi-step problems in contexts, deciding which methods to use and why
- solve problems involving numbers up to three decimal places
- use their knowledge of the order of operations to carry out calculations involving the four operations
- find pairs of numbers that satisfy an equation with two unknowns